FORM PCT 1390 REV. 593 | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NO
GÜNTER - 3 (PCT)

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO (If known, see 37 CFR 1.5)
09/831321

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/EP99/08405	3 NOVEMBER 1999	6 NOVEMBER 1998

TITLE OF INVENTION
PROCESS FOR THE PRODUCTION OF A MULTILAYER COEXTRUDATE AND THE COEXTRUDATE PRODUCED BY THIS PROCESS

APPLICANT(S) FOR DO/EO/US
WALTER GÜNTER

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. X This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.

2. ___ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.

3. X This is an express request to begin national examination procedures (35 U.S.C. 371 (f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).

4. X A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.

5. X A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. X is transmitted herewith (required only if not transmitted by the International Bureau)
   b. ___ has been transmitted by the International Bureau.
   c. ___ is not required, as the application was filed in the United States Receiving Office (RO/US).

6. X A translation of the International Application into English (35 U.S.C. 371(c)(2)).

7. ___ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
   a. ___ are transmitted herewith (required only if not transmitted by the International Bureau).
   b. ___ have been transmitted by the International Bureau.
   c. ___ have not been made; however, the time limit for making such amendments has **NOT** expired.
   d. ___ have not been made and will not be made.

8. ___ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).

9. X An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).

10. ___ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. X An Information Disclosure Statement under 37 CFR 1.97 and 1.98.

12. X An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.

13. X A **FIRST** preliminary amendment.
    ___ A **SECOND** or **SUBSEQUENT** preliminary amendment.

14. ___ A substitute specification.

15. ___ A change of power of attorney and/or address letter.

16. X Other items or information:

PCT/ISA/210 - Int'l. Search Report (English)
1 SHEET OF FORMAL DRAWINGS

Applicant Claims Priority under 35 U.S.C. §119 of German Application No. 198 51 105.1 filed November 6, 1998.
Applicant Claims Priority under 35 U.S.C. §120 of: PCT/EP99/08405 filed November 3, 1999.

APPLICATION NO. (if known, see 37 CFR 1.5) 09/831321	INTERNATIONAL APPLICATION NO. PCT/EP99/08405	ATTORNEY'S DOCKET NO GÜNTER - 3 (PCT)

	CALCULATIONS	PTO USE ONLY
X The following fees are submitted:		
Basic National Fee (37 CFR 1.492(a)(1)-(5)):		
Search Report has been prepared by the EPO or JPO.....**$860.00**		
International preliminary examination fee paid to USPTO (37 CFR 1.482) **$690.00**		
Neither international preliminary examination fee paid (37 CFR 1.82) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....**$1,000.00**		
International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4).....**$100.00**	$ 860.00	
ENTER APPROPRIATE BASIC FEE AMOUNT =		
Surcharge of **$130.00** for furnishing the oath or declaration later than ___ 20 ___ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).		

Claims	Number Filed	Number Extra	Rate	
Total Claims	11 - 20 =	- 0 -	X **$18.00**	$
Independent Claims	1 - 3 =	- 0 -	X **$80.00**	$
Multiple dependent claim(s) (if applicable)			+ **$270.00**	$
TOTAL OF ABOVE CALCULATIONS =				$ 860.00
Reduction by 1/2 for Small Entity status.				$
SUBTOTAL =				$ 860.00
Processing fee of **$130.00** for furnishing the English translation later than ___ 20 ___ 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +				$
TOTAL NATIONAL FEE =				$ 860.00
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31): **$40.00** per property +				See cover sheet attached to assign $ to be charged to Deposit Acct
TOTAL FEES ENCLOSED =				$ 860.00
				Amount to be: refunded $
				charged $

___ Applicant claims Small Entity status.

X A check in the amount of $ 860.00 to cover the above fees is enclosed.

___ Please charge my Deposit Account No. 03-2468 in the amount of $_____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. X The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No. 03-2468. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:
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Signature

Edward R. Freedman
Reg. No. 26,048

Express Mail No. **EL 769 391 415 US**
Date of Deposit **May 7, 2001**

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10, on the date indicated above, and is addressed to the Ass't. Commissioner for Patents, Washington, D.C. 20231

Ingrid Mittendorf

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: WALTER GÜNTER - 3 (PCT)

PCT NO.: PCT/EP99/08405

FILED: NOVEMBER 3, 1999

TITLE: PROCESS FOR THE PRODUCTION OF A MULTILAYER COEXTRUDATE AND THE COEXTRUDATE PRODUCED BY THIS PROCESS

PRELIMINARY AMENDMENT

BOX PCT
Ass't. Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Preliminary to the initial Office Action, please amend the above-identified application as follows:

IN THE SPECIFICATION:

On Page 1, above line 1, please insert the following paragraphs:

--CROSS REFERENCE TO RELATED APPLICATIONS

Applicant claims priority under 35 U.S.C. §119 of German Application No. 198 51 105.1 filed November 6, 1998. Applicant also claims priority under 35 U.S.C. §120 of PCT/EP99/08405 filed November 3, 1999. The international application under PCT article 21(2) was not published in English.--

IN THE CLAIMS:

Please cancel claims 1-11 and replace them with new claims 12-22 as follows:

--12. Process for the production of a multilayer coextrudate with a plastic layer that has release properties with respect to adhesives, where the materials producing the release properties are located within the plastic layer, wherein a first web (2, 22) is provided in production of the coextrudate on one side of which a layer of adhesive (3, 23) is located, after which the plastic layer (4, 24) with the release properties follows, which is in turn bonded to a second web (5, 25).

13. Process according to claim 12, wherein the layers of the coextrudate are coextruded simultaneously.

14. Process according to claim 12, wherein the layers are extruded simultaneously by the blown film process.

15. Process according to claim 12, wherein the layers are produced by the cast film process.

16. Process according to claim 12, wherein a substrate web (2, 5; 22, 25), to which the other layers are extruded in a single process operation, is provided as the first or second web.

17. Process according to claim 12, wherein a plastic film, to which the other layers are extruded in a single process operation, is provided as the substrate web (2, 5; 22, 25).

18. Process according to claim 12, wherein at least the substrate web is oriented.

19. Process according to claim 18, wherein the entire coextrudate is oriented.

20. Multilayer coextrudate produced in accordance with the process as described in claim 12, wherein at least two plastic films (2, 5; 22, 25) are provided, between which a layer of adhesive (3, 23) and a further layer (4, 24) that has release properties with respect to the adhesive are located.

21. Multilayer coextrudate according to claim 20, wherein further layers (26) are provided that are located on either or both sides of the plastic films.

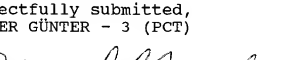
22. Multilayer coextrudate according to claim 20, wherein at least part of the coextrudate structure is oriented.

REMARKS

By this Preliminary Amendment, the application has been amended to conform with U.S. practice, the cross-reference to

related applications has been inserted on page 1 and claims 1-11 have been replaced by new claims 12-22. No new matter has been introduced. Entry of this amendment is respectfully requested.

Respectfully submitted,
WALTER GÜNTER - 3 (PCT)



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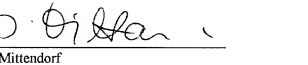
Express Mail No. **EL 769 391 415 US**
Date of Deposit May 7, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. § 1.10, on the date indicated above, and is addressed to the Ass't. Commissioner for Patents, Washington, D.C. 20231



Ingrid Mittendorf

1/PRTS

Fo7263PCT

4P Folie Forchheim GmbH

Multilayer coextrudate

Description

Process for the production of a multilayer coextrudate and the coextrudate produced by this process

The invention relates to a process for the production of a multilayer coextrudate with a plastic layer that has release properties with respect to adhesives, where the materials producing the release properties are located within the plastic layer.

The purpose of the invention is to indicate a process of the kind outlined above with which a composite material consisting of a web, an adhesive, a release layer and a further web for the release layer can be produced in an efficient way.

In the solution to this problem proposed by the invention, a first web is provided in production of the coextrudate on one side of which a layer of adhesive is located, after which the plastic layer with the release properties follows, which is in turn bonded to a second web.

At least the basic structure of the composite material is produced in a single operation by this coextrusion process.

It has proved to be particularly favourable in this context if in accordance with a further development of the invention the layers of the coextrudate are coextruded simultaneously.

Particularly efficient production of the entire layer structure is achieved as a result.

In a particularly advantageous development of the invention, the layers are extruded simultaneously by the blown film process.

It is, however, also possible in accordance with a further development of the invention that the layers are produced by the cast film process.

In accordance with a further advantageous development of the invention, it is possible that a substrate web, to which the other layers are extruded in a single process operation, is provided as the first or second web.

This process is particularly favourable especially when a web is being used that is difficult or impossible to extrude at the same time, as all the other layers can be applied to the web that is acting as the substrate web in a single operation.

It is also very advantageous if in accordance with a further development of the invention a plastic film, to which the other layers are extruded in a single process operation, is provided as the substrate web.

A further advantageous development of the invention is characterised by the fact that at least the substrate web is oriented.

The coextrudate receives favourable strength properties as a result.

It is also possible in accordance with an advantageous development of the invention that the entire coextrudate is oriented.

All the layers that can be oriented can help to increase the strength properties in this case.

In accordance with an advantageous development of the invention, a multilayer coextrudate has at least two plastic films, between which a layer of adhesive and a further layer that has release properties with respect to the adhesive are located.

In a further advantageous development of the invention, further layers are provided that are located on either or both sides of the plastic films.

It has proved to be very advantageous if in accordance with a further development of the invention at least part of the coextrudate structure is oriented.

Considerable increases in strength are achieved by orienting the substrate web or the finished coextrudate.

Two embodiments of the invention are illustrated in the drawings:

Fig.1 is a diagrammatic view of the structure of a composite material that consists of four layers and

Fig.2 shows a further composite material consisting of five layers, again in a diagrammatic view.

1 in Fig. 1 is a composite material that consists of four layers and has been produced by the coextrusion process. A layer of adhesive 3, next to which a further layer 4 that has release properties with respect to the adhesive is located, is provided on one side of a first web 2. This release layer 4 is in turn bonded to a second web 5. If both of the webs 2 and 5 are made from a coextrudable plastic, all four layers can be produced simultaneously, not only by the blown film process but also by the cast film process. It

is, however, also possible to coat the web 2 or the web 5 with the other layers subsequently by the coextrusion process.

Fig. 2 shows a further composite material 21 that consists of five layers. What is involved here is a web 22 that acts as the substrate layer for a release layer 24. This release layer 24 faces a layer of adhesive 23 that is bonded to a web 25 made of plastic. This web 25, which acts as the core layer, has a surface layer 26 on its side facing away from the layer of adhesive 23. Such a surface layer can also be provided on the web 22 that acts as the substrate layer for the release layer.

Different plastics can be used as the substrate layer for the release layer.

Good properties have, for example, been achieved with LDPE, LLDPE, HDPE, PP, mPE, PETP and PS, in each case 20 to 40 µ thick, while the actual release layer was 5 to 10 µ thick.

PP, OPP, PE, LDPE, LLDPE, mPE, PS and PET have been used very successfully for the web that supports the adhesive, with material thicknesses between 60 and 200 µ, depending on the material used. This web has in some cases been provided with an additional coating on the outside to improve printability.

The webs have in some cases been divided up into several individual layers made from different materials too.

Extrudable, permanently tacky adhesives based on hotmelts and polyolefins with appropriate tackifying additives have been used successfully as adhesives.

Example 1:

Use of SIS, SBS, SEBS and SEP block copolymers with melt indices of between 8 and 65 g / 10 min at 200° C and 5 kg. The styrene content of the polymers varies between 10 and 35%. The properties of the adhesive layer are controlled by the addition of resins and plasticisers, e.g. by means of aliphatic hydrocarbon resins, polyterpene resins, hydrolysed hydrocarbon resins, aromatic hydrocarbon resins, paraffin waxes, microcrystalline waxes, polyisobutylene and process oils.

Liquid components are processed into an extrudable form by carrying out a compounding operation first.

The extrusion temperatures vary between 100 and 240° C, avoiding excessively high shear forces at the same time.

Example 2:

Another way to produce the adhesive layer involves the inclusion of UV acrylates or UV-curing PSAs between the coextruded substrate and release layers by using melt transport technology.

The radiation-cured basic materials are, for example, acrylate copolymers with an integrated photoinitiator. UV cross-linking is carried out by the polymer substrate layer for the adhesive.

The acrylate copolymers can be modified by resins and plasticisers, while the tack of the adhesive layer can be regulated via the radiation dose.

Typical radiation wavelengths for cross-linking purposes are in the range between 250 and 260 nm (UVC).

Typical processing temperatures for the acrylate copolymers are between 110 and 150° C.

If a substrate web is used that is coated by the coextrusion process, it is possible to orient not only the substrate web alone but also the finished coextrudate in order to increase the strength properties.

If the entire structure is produced as a coextrudate, this coextrudate can also be oriented subsequently to increase the strength properties.

Fo7263PCT

4P Folie Forchheim GmbH

Multilayer coextrudate

Claims

1. Process for the production of a multilayer coextrudate with a plastic layer that has release properties with respect to adhesives, where the materials producing the release properties are located within the plastic layer, **wherein** a first web (2, 22) is provided in production of the coextrudate on one side of which a layer of adhesive (3, 23) is located, after which the plastic layer (4, 24) with the release properties follows, which is in turn bonded to a second web (5, 25).

2. Process according to claim 1, **wherein** the layers of the coextrudate are coextruded simultaneously.

3. Process according to claim 1 or 2, **wherein** the layers are extruded simultaneously by the blown film process.

4. Process according to claim 1 or 2, **wherein** the layers are produced by the cast film process.

5. Process according to claim 1 or 2, **wherein** a substrate web (2, 5; 22, 25), to which the other layers are extruded in a single process operation, is provided as the first or second web.

6. Process according to claim 1, **wherein** a plastic film, to which the other layers are extruded in a single process operation, is provided as the substrate web (2, 5; 22, 25).

7. Process according to one of the previous claims, **wherein** at least the substrate web is oriented.

8. Process according to claim 7, **wherein** the entire coextrudate is oriented.

9. Multilayer coextrudate produced in accordance with the process as described in one of the previous claims, **wherein** at least two plastic films (2, 5; 22, 25) are provided, between which a layer of adhesive (3, 23) and a further layer (4, 24) that has release properties with respect to the adhesive are located.

10. Multilayer coextrudate according to claim 9, **wherein** further layers (26) are provided that are located on either or both sides of the plastic films.

11. Multilayer coextrudate according to claim 9 or 10, **wherein** at least part of the coextrudate structure is oriented.

Fo7263PCT

4P Folie Forchheim GmbH

Multilayer coextrudate

Summary

Process for the production of a multilayer coextrudate
and the coextrudate produced by this process

Process for the production of a multilayer coextrudate with a plastic layer that has release properties with respect to adhesives, where the materials producing the release properties are located within the plastic layer, where a first web (2, 22) is provided in production of the coextrudate on one side of which a layer of adhesive (3, 23) is located, after which the plastic layer (4, 24) with the release properties follows, which is in turn bonded to a second web (5, 25). A multilayer coextrudate is characterised by the fact that at least two plastic films (2, 5; 22, 25) are provided, between which a layer of adhesive (3, 23) and a further layer (4, 24) that has release properties with respect to the adhesive are located.

Fig. 1

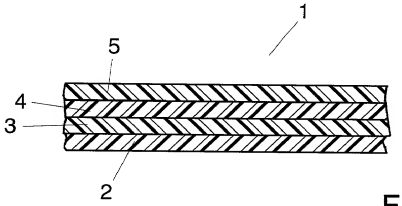


Fig. 1

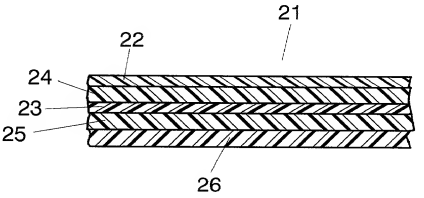


Fig. 2

COMBINED DECLARATION FOR (Includes Reference to PCT Internat) +49 9191 81446 ND POWER OF ATTORNEY

ATTORNEY'S DOCKET NUMBER GUNTER-3 PCT

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Process for the Production of a Multilayer Coextrudate and the Coextrudate Produced by this Process

the specification of which (check only one item below):

[ ] is attached hereto.

[ ] was filed as United States application

Serial No. _____

on _____

and was amended

on _____ (if applicable).

[X] was filed as PCT international application

Number PCT/EP99/08405

on 3 NOVEMBER 1999

and was amended under PCT Article 19

on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY (if PCT, indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 U.S.C. 119
GERMANY	198 51 105.1	6 NOVEMBER 1998	[X] YES [ ] NO
			[ ] YES [ ] NO
			[ ] YES [ ] NO
			[ ] YES [ ] NO
			[ ] YES [ ] NO

COMBINED DECLARATION I (Includes Reference to PCT Interna) AND POWER OF ATTORNEY

ATTORNEY'S DOCKET NUMBER: GUNTER-3 PCT

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below.

(Application Number) (Filing Date)

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclose in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:

U.S. APPLICATIONS		STATUS (Check One)		
U.S. APPLICATION NUMBER	U.S. FILING DATE	PATENTED	PENDING	ABANDONED

PCT APPLICATIONS DESIGNATING THE U.S.

PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (If any)			

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (List name and registration numbers): KURT KELMAN, Registration No. 18,628
ALLISON C. COLLARD, Registration No. 22,532; WILLIAM C. COLLARD, Registration No. 38,411
EDWARD R. FREEDMAN, Registration No. 26,048; FREDERICK J. DORCHAK, Registration No. 29,298
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Send Correspondence to: COLLARD & ROE, P.C. 1077 Northern Boulevard Roslyn, New York 11576 Customer No. 25889

Direct Telephone Calls to. (Name and telephone number) (516) 365-9802

2	FULL NAME OF INVENTOR	FAMILY NAME: GUNTER	FIRST GIVEN NAME: WALTER	SECOND GIVEN NAME
0	RESIDENCE & CITIZENSHIP	CITY: FORCHHEIM	STATE OR FOREIGN COUNTRY: GERMANY DEX	COUNTRY OF CITIZENSHIP: GERMANY
1	POST OFFICE ADDRESS	POST OFFICE ADDRESS: ZWEIBRÜCKENSTRASSE 15-25	CITY: D-91301 FORCHHEIM	STATE & ZIP CODE/COUNTRY: GERMANY

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201 Walter Gunter

DATE 3.5.2001